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       CATE, RICHARD L.
       SAH, DINAH W.Y.

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Gly Ser Asn Leu Leu Thr Leu Trp Leu Phe Ser Asn Asn Leu Ser Thr
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Ile Tyr Pro Gly Thr Phe Arg His Leu Gln Ala Leu Glu Glu Leu Asp
            100             105             110

Leu Gly Asp Asn Arg His Leu Arg Ser Leu Glu Pro Asp Thr Phe Gln
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Tyr Leu Gln Glu Asn Ser Leu Leu His Leu Gln Asp Asp Leu Phe Ala
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            245             250             255

Arg Leu Asn Ala Asn Pro Trp Ala Cys Asp Cys Arg Ala Arg Pro Leu
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Trp Ala Trp Phe Gln Arg Ala Arg Val Ser Ser Ser Asp Val Thr Cys
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Ala Thr Pro Pro Glu Arg Gln Gly Arg Asp Leu Arg Ala Leu Arg Glu
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Ala Asp Phe Gln Ala Cys Pro Pro Ala Ala Pro Thr Arg Pro Gly Ser
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Arg Ile Thr Phe Leu Gln Gln Gly His Phe Ser Pro Ala Met Val Thr
                85                  90                  95

Leu Trp Ile Tyr Ser Asn Asn Ile Thr Phe Ile Ala Pro Asn Thr Phe
                100                 105                 110

Glu Gly Phe Val His Leu Glu Glu Leu Asp Leu Gly Asp Asn Arg Gln
            115                 120                 125

Leu Arg Thr Leu Ala Pro Glu Thr Phe Gln Gly Leu Val Lys Leu His
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Ala Leu Tyr Leu Tyr Lys Cys Gly Leu Ser Ala Leu Pro Ala Gly Ile
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Phe Gly Gly Leu His Ser Leu Gln Tyr Leu Tyr Leu Gln Asp Asn His
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Ile Glu Tyr Leu Gln Asp Asp Ile Phe Val Asp Leu Val Asn Leu Ser
            180                 185                 190

His Leu Phe Leu His Gly Asn Lys Leu Trp Ser Leu Gly Gln Gly Ile
            195                 200                 205

Phe Arg Gly Leu Val Asn Leu Asp Arg Leu Leu Leu His Glu Asn Gln
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Leu Gln Trp Val His His Lys Ala Phe His Asp Leu His Arg Leu Thr
225                 230                 235                 240

Thr Leu Phe Leu Phe Asn Asn Ser Leu Thr Glu Leu Gln Gly Asp Cys
                245                 250                 255

Leu Ala Pro Leu Val Ala Leu Glu Phe Leu Arg Leu Asn Gly Asn Ala
            260                 265                 270

Trp Asp Cys Gly Cys Arg Ala Arg Ser Leu Trp Glu Trp Leu Arg Arg
        275                 280                 285

Phe Arg Gly Ser Ser Ser Ala Val Pro Cys Ala Thr Pro Glu Leu Arg
    290                 295                 300

Gln Gly Gln Asp Leu Lys Leu Leu Arg Val Glu Asp Phe Arg Asn Cys
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Thr Gly Pro Val Ser Pro His Gln Ile Lys Ser His Thr Leu Thr Thr
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Ser Asp Arg Ala Ala Arg Lys Glu His His Pro Ser His Gly Ala Ser
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Cys Tyr Asn Glu Pro Lys Val Thr Thr Ser Cys Pro Gln Gln Gly Leu
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Gln Ala Val Pro Val Gly Ile Pro Ala Ala Ser Gln Arg Ile Phe Leu
    50                  55                  60

His Gly Asn Arg Ile Ser His Val Pro Ala Ala Ser Phe Arg Ala Cys
65                  70                  75                      80

Arg Asn Leu Thr Ile Leu Trp Leu His Ser Asn Val Leu Ala Arg Ile
                85                  90                      95

Asp Ala Ala Ala Phe Thr Gly Leu Ala Leu Leu Glu Gln Leu Asp Leu
            100                 105                 110

Ser Asp Asn Ala Gln Leu Arg Ser Val Asp Pro Ala Thr Phe His Gly
        115                 120                 125

Leu Gly Arg Leu His Thr Leu His Leu Asp Arg Cys Gly Leu Gln Glu
    130                 135                 140

Leu Gly Pro Gly Leu Phe Arg Gly Leu Ala Ala Leu Gln Tyr Leu Tyr
145                 150                 155                     160

Leu Gln Asp Asn Ala Leu Gln Ala Leu Pro Asp Asp Thr Phe Arg Asp
                165                 170                     175

Leu Gly Asn Leu Thr His Leu Phe Leu His Gly Asn Arg Ile Ser Ser
            180                 185                     190

Val Pro Glu Arg Ala Phe Arg Gly Leu His Ser Leu Asp Arg Leu Leu
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Leu Gly Arg Leu Met Thr Leu Tyr Leu Phe Ala Asn Asn Leu Ser Ala
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Leu Pro Thr Glu Ala Leu Ala Pro Leu Arg Ala Leu Gln Tyr Leu Arg
                245   250   255

Leu Asn Asp Asn Pro Trp Val Cys Asp Cys Arg Ala Arg Pro Leu Trp
            260   265   270

Ala Trp Leu Gln Lys Phe Arg Gly Ser Ser Ser Glu Val Pro Cys Ser
    275   280   285

Leu Pro Gln Arg Leu Ala Gly Arg Asp Leu Lys Arg Leu Ala Ala Asn
    290   295   300

Asp Leu Gln Gly Cys Ala Val Ala Thr Gly Pro Tyr His Pro Ile Trp
305   310   315   320

Thr Gly Arg Ala Thr Asp Glu Glu Pro Leu Gly Leu Pro Lys Cys Cys
                325   330   335

Gln Pro Asp Ala Ala Asp Lys Ala Ser Val Leu Glu Pro Gly Arg Pro
            340   345   350

Ala Ser Ala Gly Asn Ala Leu Lys Gly Arg Val Pro Pro Gly Asp Ser
    355   360   365

Pro Pro Gly Asn Gly Ser Gly Pro Arg His Ile Asn Asp Ser Pro Phe
    370   375   380

Gly Thr Leu Pro Gly Ser Ala Glu Pro Pro Leu Thr Ala Val Arg Pro
385   390   395   400

Glu Gly Ser Glu Pro Pro Gly Phe Pro Thr Ser Gly Pro Arg Arg Arg
                405   410   415

Pro Gly Cys Ser Arg Lys Asn Arg Thr Arg Ser His Cys Arg Leu Gly
            420   425   430

Gln Ala Gly Ser Gly Gly Gly Thr Gly Asp Ser Glu Gly Ser Gly
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Ala Leu Pro Ser Leu Thr Cys Ser Leu Thr Pro Leu Gly Leu Ala Leu
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             20   25   30

Xaa Xaa Arg Xaa Phe Leu Xaa Xaa Asn Xaa Ile Xaa Xaa Xaa Xaa Xaa
         35   40   45

Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Trp Xaa Xaa Ser
     50   55   60

Asn Xaa Xaa Xaa Xaa Ile Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa
 65   70   75   80

Leu Glu Xaa Leu Asp Leu Xaa Asp Asn Xaa Xaa Leu Arg Xaa Xaa Xaa
             85   90   95

Pro Xaa Thr Phe Xaa Gly Leu Xaa Xaa Leu Xaa Leu Xaa Leu Xaa Xaa
             100   105   110

Cys Xaa Leu Xaa Xaa Leu Xaa Xaa Xaa Xaa Phe Xaa Gly Leu Xaa Xaa
         115   120   125

Leu Gln Tyr Leu Tyr Leu Gln Xaa Asn Xaa Xaa Xaa Xaa Leu Xaa Asp
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Asp Xaa Phe Xaa Asp Leu Xaa Asn Leu Xaa His Leu Phe Leu His Gly
145   150   155   160

Asn Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Arg Gly Leu Xaa Xaa
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Leu Asp Arg Leu Leu Leu His Xaa Asn Xaa Xaa Xaa Xaa Val His Xaa
             180   185   190

Xaa Ala Phe Xaa Xaa Leu Xaa Arg Leu Xaa Xaa Leu Xaa Leu Phe Xaa
     195   200   205

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Asn Xaa Leu Xaa Xaa Leu Xaa Xaa Xaa Xaa Leu Ala Xaa Leu Xaa Xaa
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Ala Arg Xaa Leu Trp Xaa Trp Xaa Xaa Xaa Xaa Arg Xaa Ser Ser Ser
            245             250             255
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Xaa Val Xaa Cys Xaa Xaa Pro Xaa Xaa Xaa Xaa Gly Xaa Asp Leu Xaa
            260             265             270
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Xaa Leu Xaa Xaa Xaa Asp Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Pro
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```

```
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg
385             390             395             400
```

```
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            405             410             415
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```
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Xaa Xaa Xaa
            420             425             430
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```
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu
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His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu
            20              25              30
```

```
Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr
        35              40              45
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14

Ile Lys Glu Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser
      50   55   60

Leu Lys
 65

<210> 8
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<212> PRT
<213> Homo sapeins

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Cys Pro Met Leu Cys Thr Cys Tyr Ser Ser Pro Pro Thr Val Ser Cys
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Gln Ala Asn Asn Phe Ser Ser Val Pro Leu Ser Leu Pro Pro Ser Thr
              20   25   30

Gln Arg Leu Phe Leu Gln Asn Asn Leu Ile Arg Thr Leu Arg Pro Gly
          35   40   45

Thr Phe Gly Ser Asn Leu Leu Thr Leu Trp Leu Phe Ser Asn Asn Leu
      50   55   60

Ser Thr Ile Tyr Pro Gly Thr Phe Arg His Leu Gln Ala Leu Glu Glu
 65   70   75   80

Leu Asp Leu Gly Asp Asn Arg His Leu Arg Ser Leu Glu Pro Asp Thr
              85   90   95

Phe Gln Gly Leu Glu Arg Leu Gln Ser Leu His Leu Tyr Arg Cys Gln
              100   105   110

Leu Ser Ser Leu Pro Gly Asn Ile Phe Arg Gly Leu Val Ser Leu Gln
          115   120   125

Tyr Leu Tyr Leu Gln Glu Asn Ser Leu Leu His Leu Gln Asp Asp Leu
      130   135   140

Phe Ala Asp Leu Ala Asn Leu Ser His Leu Phe Leu His Gly Asn Arg
145   150   155   160

Leu Arg Leu Leu Thr Glu His Val Phe Arg Gly Leu Gly Ser Leu Asp
              165   170   175

Arg Leu Leu Leu His Gly Asn Arg Leu Gln Gly Val His Arg Ala Ala
              180   185   190

Phe Arg Gly Leu Ser Arg Leu Thr Ile Leu Tyr Leu Phe Asn Asn Ser
          195   200   205

Leu Ala Ser Leu Pro Gly Glu Ala Leu Ala Asp Leu Pro Ser Leu Glu
      210   215   220

Phe Leu Arg Leu Asn Ala Asn Pro Trp Ala Cys Asp Cys Arg Ala Arg
225   230   235   240

Pro Leu Trp Ala Trp Phe Gln Arg Ala Arg Val Ser Ser Ser Asp Val
              245   250   255

Thr Cys Ala Thr Pro Pro Glu Arg Gln Gly Arg Asp Leu Arg Ala Leu

15

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                   260                    265                         270

Arg Glu Ala Asp Phe Gln Ala Cys Pro Pro Ala Ala Pro Thr Arg Pro
        275                 280                 285

Gly Ser Arg Ala Arg Gly Asn Ser Ser Ser Asn His Leu Tyr Gly Val
        290                 295                 300

Ala Glu Ala Gly Ala Pro Pro Ala Asp Pro Ser Thr Leu Tyr Arg Asp
305                 310                 315                 320

Leu Pro Ala Glu Asp Ser Arg Gly Arg Gln Gly Gly Asp Ala Pro Thr
                325                 330                 335

Glu Asp Asp Tyr Trp Gly Gly Tyr Gly Gly Glu Asp Gln Arg Gly Glu
                340                 345                 350

Gln Met Cys Pro Gly Ala Ala Cys Gln Ala Pro Pro Asp Ser Arg Gly
                355                 360                 365

Pro Ala Leu Ser Ala Gly Leu Pro Ser Pro Leu Leu Cys Leu Leu Leu
        370                 375                 380

Leu Val Pro His His Leu
385                 390


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                20                  25                  30

Glu Arg Ile Phe Leu Gln Asn Asn Arg Ile Thr Phe Leu Gln Gln Gly
        35                  40                  45

His Phe Ser Pro Ala Met Val Thr Leu Trp Ile Tyr Ser Asn Asn Ile
    50                  55                  60

Thr Phe Ile Ala Pro Asn Thr Phe Glu Gly Phe Val His Leu Glu Glu
65                  70                  75                  80

Leu Asp Leu Gly Asp Asn Arg Gln Leu Arg Thr Leu Ala Pro Glu Thr
                85                  90                  95

Phe Gln Gly Leu Val Lys Leu His Ala Leu Tyr Leu Tyr Lys Cys Gly
                100                 105                 110

Leu Ser Ala Leu Pro Ala Gly Ile Phe Gly Gly Leu His Ser Leu Gln
        115                 120                 125

Tyr Leu Tyr Leu Gln Asp Asn His Ile Glu Tyr Leu Gln Asp Asp Ile
        130                 135                 140

Phe Val Asp Leu Val Asn Leu Ser His Leu Phe Leu His Gly Asn Lys
145                 150                 155                 160
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16

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Leu Trp Ser Leu Gly Gln Gly Ile Phe Arg Gly Leu Val Asn Leu Asp
                165              170              175

Arg Leu Leu Leu His Glu Asn Gln Leu Gln Trp Val His His Lys Ala
              180              185              190

Phe His Asp Leu His Arg Leu Thr Thr Leu Phe Leu Phe Asn Asn Ser
          195              200              205

Leu Thr Glu Leu Gln Gly Asp Cys Leu Ala Pro Leu Val Ala Leu Glu
      210              215              220

Phe Leu Arg Leu Asn Gly Asn Ala Trp Asp Cys Gly Cys Arg Ala Arg
225              230              235              240

Ser Leu Trp Glu Trp Leu Arg Arg Phe Arg Gly Ser Ser Ser Ala Val
              245              250              255

Pro Cys Ala Thr Pro Glu Leu Arg Gln Gly Gln Asp Leu Lys Leu Leu
          260              265              270

Arg Val Glu Asp Phe Arg Asn Cys Thr Gly Pro Val Ser Pro His Gln
      275              280              285

Ile Lys Ser His Thr Leu Thr Thr Ser Asp Arg Ala Ala Arg Lys Glu
    290              295              300

His His Pro Ser His Gly Ala Ser Arg Asp Lys Gly His Pro His Gly
305              310              315              320

His Pro Pro Gly Ser Arg Ser Gly Tyr Lys Lys Ala Gly Lys Asn Cys
              325              330              335

Thr Ser His Arg Asn Arg Asn Gln Ile Ser Lys Val Ser Ser Gly Lys
          340              345              350

Glu Leu Thr Glu Leu Gln Asp Tyr Ala Pro Asp Tyr Gln His Lys Phe
          355              360              365

Ser Phe Asp Ile Met Pro Thr Ala Arg Pro Lys Arg Lys Gly Lys Cys
    370              375              380

Ala Arg Arg Thr Pro Ile Arg Ala Pro Ser Gly Val Gln Gln Ala Ser
385              390              395              400

Ser Gly Thr Ala Leu Gly Ala Pro Leu Leu Ala Trp Ile Leu Gly Leu
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Ala Val Thr Leu Arg
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Xaa Xaa Xaa Arg Xaa Ser Ser Ser Xaa Val Xaa Cys Xaa Xaa Pro Xaa
            20   25   30

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Phe Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Trp Xaa Xaa Ser Asn Xaa
            20   25   30

Xaa Xaa Xaa Ile Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa Leu Glu
        35   40   45

Xaa Leu Asp Leu Xaa Asp Asn Xaa Xaa Leu Arg Xaa Xaa Xaa Pro Xaa
    50   55   60

Thr Phe Xaa Gly Leu Xaa Xaa Leu Xaa Leu Xaa Leu Xaa Xaa Cys Xaa
 65   70   75   80

Leu Xaa Xaa Leu Xaa Xaa Xaa Xaa Phe Xaa Gly Leu Xaa Xaa Leu Gln
            85   90   95

Tyr Leu Tyr Leu Gln Xaa Asn Xaa Xaa Xaa Xaa Leu Xaa Asp Asp Xaa
        100   105   110

Phe Xaa Asp Leu Xaa Asn Leu Xaa His Leu Phe Leu His Gly Asn Xaa
        115   120   125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Arg Gly Leu Xaa Xaa Leu Asp
    130   135   140

Arg Leu Leu Leu His Xaa Asn Xaa Xaa Xaa Xaa Val His Xaa Xaa Ala
145   150   155   160

Phe Xaa Xaa Leu Xaa Arg Leu Xaa Xaa Leu Xaa Leu Phe Xaa Asn Xaa
            165   170   175

Leu Xaa Xaa Leu Xaa Xaa Xaa Xaa Leu Ala Xaa Leu Xaa Xaa Leu Xaa
        180   185   190

Xaa Leu Arg Leu
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Ile Gly Leu Leu Gln Pro Gly His Phe Ser Pro Ala Met Val Thr Leu
             20                  25                  30

Trp Ile Tyr Ser Asn Asn Ile Thr Tyr Ile His Pro Ser Thr Phe Glu
         35                  40                  45

Gly Phe Val His Leu Glu Glu Leu Asp Leu Gly Asp Asn Arg Gln Leu
     50                  55                  60

Arg Thr Leu Ala Pro Glu Thr Phe Gln Gly Leu Val Lys Leu His Ala
 65                  70                  75                  80

Leu Tyr Leu Tyr Lys Cys Gly Leu Ser Ala Leu Pro Ala Gly Val Phe
                 85                  90                  95

Gly Gly Leu His Ser Leu Gln Tyr Leu Tyr Leu Gln Asp Asn His Ile
             100                 105                 110

Glu Tyr Leu Gln Asp Asp Ile Phe Val Asp Leu Val Asn Leu Ser His
         115                 120                 125

Leu Phe Leu His Gly Asn Lys Leu Trp Ser Leu Gly Pro Gly Thr Phe
     130                 135                 140

Arg Gly Leu Val Asn Leu Asp Arg Leu Leu Leu His Glu Asn Gln Leu
145                 150                 155                 160

Gln Trp Val His His Lys Ala Phe His Asp Leu Arg Arg Leu Thr Thr
             165                 170                 175

Leu Phe Leu Phe Asn Asn Ser Leu Ser Glu Leu Gln Gly Glu Cys Leu
             180                 185                 190

Ala Pro Leu Gly Ala Leu Glu Phe Leu Arg Leu Asn Gly Asn Pro Trp
             195                 200                 205

Asp Cys Gly Cys Arg Ala Arg Ser Leu Trp Glu Trp Leu Gln Arg Phe
     210                 215                 220

Arg Gly Ser Ser Ser Ala Val Pro Cys Val Ser Pro Gly Leu Arg His
225                 230                 235                 240

Gly Gln Asp Leu Lys Leu Leu Arg Ala Glu Asp Phe Arg Asn Cys Thr
             245                 250                 255
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25

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Gly Pro Ala Ser Pro His Gln Ile Lys Ser His Thr Leu Thr Thr Thr
            260                 265             270

Asp Arg Ala Ala Arg Lys Glu His His Ser Pro His Gly Pro Thr Arg
        275                 280             285

Ser Lys Gly His Pro His Gly Pro Arg Pro Gly His Arg Lys Pro Gly
        290                 295             300

Lys Asn Cys Thr Asn Pro Arg Asn Arg Asn Gln Ile Ser Lys Ala Gly
305                 310             315                 320

Ala Gly Lys Gln Ala Pro Glu Leu Pro Asp Tyr Ala Pro Asp Tyr Gln
                325             330             335

His Lys Phe Ser Phe Asp Ile Met Pro Thr Ala Arg Pro Lys Arg Lys
            340             345             350

Gly Lys Cys Ala Arg Arg Thr Pro Ile Arg Ala Pro Ser Gly Val Gln
        355             360             365

Gln Ala Ser Ser Ala Ser Ser Leu Gly Ala Ser Leu Leu Ala Trp Thr
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27

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123

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124

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125

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126

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Xaa Xaa Arg Xaa Phe Leu Xaa Xaa Asn Xaa Ile Xaa Xaa Xaa Xaa Xaa
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Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Trp Xaa Xaa Ser
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Asn Xaa Xaa Xaa Xaa Ile Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa
 65   70   75   80

Leu Glu Xaa Leu Asp Leu Xaa Asp Asn Xaa Xaa Leu Xaa Xaa Xaa Xaa
            85   90   95

Pro Xaa Thr Phe Xaa Gly Leu Xaa Xaa Leu Xaa Xaa Leu Xaa Leu Xaa
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Asp Xaa Xaa Phe Xaa Asp Leu Xaa Asn Leu Xaa His Leu Phe Leu His
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Gly Asn Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Arg Gly Leu Xaa
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Xaa Xaa Ala Phe Xaa Xaa Leu Xaa Arg Leu Xaa Xaa Leu Xaa Leu Phe
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137

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Ser Xaa Val Xaa Cys Xaa Xaa Pro Xaa Xaa Xaa Xaa Xaa Xaa Asp Leu
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        35                  40                  45

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